

UNIVERSITY OF ZAGREB  
FACULTY OF VETERINARY MEDICINE  
Heinzelova 55  
Tel. 01/2390272  
Division: Division for Animal Production and Biotechnology  
Department of Animal Nutrition and Dietetics  
Email: prehrana\_i\_dijetetika@vef.hr  
Register no.: 61-07-19- 3  
Zagreb, 9. 1. 2019.

## COURSE SYLLABUS

Course name: Applied Animal Nutrition

Academic year 2018-19

Course leader: Full professor Željko Mikulec, DVM, PhD

Teachers:

Full professor Željko Mikulec, DVM, PhD  
Assistant Professor Hrvoje Valpotić, DVM, PhD

Associate teacher: Diana Brozić, DVM, PhD

First day of classes: February 25<sup>th</sup>, 2019.

Last day of classes: May 23<sup>rd</sup>, 2019.

### Timetable for LECTURES academic year 2018-2019

LECTURES				
Date	Methodological unit	Teacher	Location / time	Literature
25. 2. 2019.	Nutrition in different stages of development and production Factors affecting feed consumption	Assistant Professor Hrvoje Valpotić	Department of Animal Nutrition and Dietetics (8.00-10.00 h)	1. + material from lectures
26. 2. 2019.	Feeding dairy cows	Assistant Professor Hrvoje Valpotić	Department of Animal Nutrition and Dietetics (12.00-14.00 h)	1. + material from lectures
27. 2. 2019.	Calf nutrition	Full professor Željko Mikulec	Department of Animal Nutrition and Dietetics (12.00-13.00 h)	1. + material from lectures
27. 2. 2019.	Feeding beef cattle	Full professor Željko Mikulec	Department of Animal Nutrition and Dietetics (13.00-14.00 h)	1. + material from lectures
28. 2. 2019.	Sheep nutrition	Full professor Željko Mikulec	Department of Animal Nutrition and Dietetics (8.00-10.00 h)	1. + material from lectures
1. 3. 2019.	Goat nutrition	Full professor Željko Mikulec	Department of Animal Nutrition and Dietetics (14.00-15.00 h)	1. + material from lectures
1. 3. 2019.	Feeding growing-finishing pigs	Assistant Professor Hrvoje Valpotić	Department of Animal Nutrition and Dietetics (15.00-16.00 h)	1. + material from lectures
5. 3. 2019.	Feeding sows and boars	Assistant Professor Hrvoje Valpotić	Department of Animal Nutrition and Dietetics (12.00-14.00 h)	1. + material from lectures
7. 3. 2019.	Feeding piglets	Assistant Professor Hrvoje Valpotić	Department of Animal Nutrition and Dietetics (12.00-14.00 h)	1. + material from lectures

12. 3. 2019.	Feeding poultry	Full professor Željko Mikulec	Department of Animal Nutrition and Dietetics (14.00-16.00 h)	1. + material from lectures
25. 3. 2019.	Feeding poultry	Full professor Željko Mikulec	Department of Animal Nutrition and Dietetics (10.00-12.00 h)	1. + material from lectures
28. 3. 2019.	Dog and cat nutrition	Assistant Professor Hrvoje Valpotić	Department of Animal Nutrition and Dietetics (8.00-10.00 h)	1. + material from lectures
1. 4. 2019.	Dog and cat nutrition	Assistant Professor Hrvoje Valpotić	Department of Animal Nutrition and Dietetics (8.00-9.00 h)	1. + material from lectures
1. 4. 2019.	Feeding horses	Diana Brozić, DVM, PhD	Department of Animal Nutrition and Dietetics (9.00-10.00 h)	1. + material from lectures
4. 4. 2019.	Feeding horses	Diana Brozić, DVM, PhD	Department of Animal Nutrition and Dietetics (11.00-12.00 h)	1. + material from lectures
4. 4. 2019.	Feeding rabbits	Assistant Professor Hrvoje Valpotić	Department of Animal Nutrition and Dietetics (12.00-13.00 h)	1. + material from lectures
10. 4. 2019.	Game nutrition	Full professor Željko Mikulec	Department of Animal Nutrition and Dietetics (12.00-13.00 h)	1. + material from lectures

Timetable for PRACTICALS academic year 2018-2019

<b>PRACTICALS</b>						
<b>Date</b>	<b>Methodological unit</b>	<b>Teacher</b>	<b>Type of practical</b>	<b>Group</b>	<b>Location / time</b>	<b>Literature</b>
6. 3. 2019.	Feeding dairy cows	Diana Brozić, DVM, PhD	Practicum	1	Department of Animal Nutrition and Dietetics (8.00-10.00 h)	1. + material from practicals
11. 3. 2019.	Feeding dairy cows Feeding beef cattle	Full professor Željko Mikulec	Practicum	1	Department of Animal Nutrition and Dietetics (10.00-12.00 h)	1.+ material from practicals
13. 3. 2019.	Sheep and goat nutrition	Full professor Željko Mikulec	Practicum	1	Department of Animal Nutrition and Dietetics (10.00-12.00 h)	1. + material from practicals
19. 3. 2019.	Swine nutrition	Assistant Professor Hrvoje Valpotić	Practicum	1	Department of Animal Nutrition and Dietetics (14.00-16.00 h)	1. + material from practicals
20. 3. 2019.	Swine nutrition	Assistant Professor Hrvoje Valpotić	Practicum	1	Department of Animal Nutrition and Dietetics (8.00-10.00 h)	1. + material from practicals
25. 3. 2019.	Feeding poultry	Assistant Professor Hrvoje Valpotić	Practicum	1	Department of Animal Nutrition and Dietetics (8.00-10.00 h)	1. + material from practicals
27. 3. 2019.	Feeding poultry	Full professor Željko Mikulec	Practicum	1	Department of Animal Nutrition and Dietetics (8.00-10.00 h)	1. + material from practicals
29. 3. 2019.	Dog and cat nutrition	Diana Brozić, DVM, PhD	Practicum	1	Department of Animal Nutrition and Dietetics (8.00-10.00 h)	1. + material from practicals
3. 4. 2019.	Dog and cat nutrition	Diana Brozić, DVM, PhD	Practicum	1	Department of Animal Nutrition and Dietetics (11.00-13.00 h)	1. + material from practicals

9. 4. 2019.	Feeding horses Laboratory animal feeding and nutrition	Diana Brozić, DVM, PhD	Practicum	1	Department of Animal Nutrition and Dietetics (10.00-12.00 h)	1. + material from practicals
-------------	---	------------------------	-----------	---	--	-------------------------------

**Timetable for FIELD COURSES academic year 2018-2019**

<b>FIELD COURSES</b>						
<b>Date</b>	<b>Methodological unit</b>	<b>Teacher</b>	<b>Type of practical</b>	<b>Group</b>	<b>Location / time</b>	<b>Literature</b>
15. 3. 2019.	Feeding beef cattle	Assistant Professor Hrvoje Valpotić	Field courses	1	Beef cattle farm (10.00-16.00 h)	1. + material from practicals
22. 3. 2019.	Feeding dairy cows	Diana Brozić, DVM, PhD	Field courses	1	Grassland Research Center - Sljeme (8.00-16.00 h)	1.+ material from practicals
12. 4. 2019.	Feeding cows, sheep and horses	Assistant Professor Hrvoje Valpotić	Field courses	1	Križevci College of Agriculture (10.00-16.00 h)	1. + material from practicals
20. 5. 2019.	Animal feed production	Full professor Željko Mikulec	Field courses	1	Animal feed factory "Kušić promet" d.o.o. Sv.Ivan Zelina (8.00-12.00 h)	1. + material from practicals
23. 5. 2019.	Animal feed production	Full professor Željko Mikulec	Field courses	1	"Agroproteinka" d.d. Sesvetski Kraljevec (8.00-12.00 h)	1. + material from practicals

**STUDENT OBLIGATIONS**

Lecture attendance	During the session of the “Applied Animal Nutrition” course the student must attend 13 lecture lessons in order to gain 3 minimal points. Maximal number of points from this evaluation element is 6 points. Students that don't obtain a minimum of required points for the attendance of lectures are not eligible for exam.
Practicals attendance	During the session of the “Applied Animal Nutrition” course the student must attend 34 practical lessons in order to gain 8 minimal points. Maximal number of points from this evaluation element is 12 points. Students that don't obtain a minimum of required points for the attendance of practicals are not eligible for exam.
Active participation in seminars and practicals	During the session at the time of practicals the students will be given a short announced quiz. Minimum amount of points to pass this evaluation is 5. Students that don't obtain a minimum of required points for activity or are not present at the time of the quiz are not eligible for exam. The maximum number of points that student can gain at the quiz is 10.
Compensation and correction of mid-term	Students that for reasonable grounds did not attend or didn't obtain minimum required points form mid-term are obliged to take it during the following time. After the last regular mid-term students are not entitled for compensation/correction until the next academic year.
Final exam	The final exam will be held in oral form. At the final exam a student is given 5 questions each worth 8 points. The maximum number of points a student can gain at the final exam is 40. The student must gain a minimum of 24 points from this evaluation element.
Examination requirements	Student requirements are defined in the Regulations on the Integrated Undergraduate and Graduate Study of Veterinary Medicine. Given the above, the student must acquire a minimum number of points from all assessment elements in order to take the final exam. <b>Article 45:</b> a student can justifiably be absent from up to 50 % of the lectures; 30% of the seminars and 30 % of the exercises.

**GRADING AND EVALUATING STUDENT WORK**

Continuous knowledge-checking (mid-terms)	During the session one mid-term will be organised at the time of the lessons, made out of 32 questions or problems. Each correctly solved problem or answered question is worth 1 point. A student must gain the total of 20 points min from the mid-term. The maximum number of points from this evaluation is 32 points. Student will have three terms to complete this evaluation element. Students that don't obtain a minimum of required points or are not present at all mid-terms in admitted time are not eligible for exam.
Final exams (dates)	14.6.2019., 28.6.2019., 12.7.2019., 4.9.2019., 18.9.2019.
Form of final exam	Oral

**LITERATURE**

Obligatory literature	1. Cheeke, P. R. (2005): Applied Animal Nutrition. Feeds and Feeding. (3rd ed.). Pearson Prentice Hall, USA.
Optional literature	1. Pond, W. G., D. C. Church, K. R. Pond (1995): Basic Animal Nutrition and Feeding (Fourth Edition). John Wiley and Sons Inc., USA. 2. McDonald, P., R. A. Edwards, J. F. D. Greenhalgh, C. A. Morgan, L. A. Sinclair, R. G. Wilkinson (2010): Animal Nutrition (Seventh edition). Pearson Prentice Hall, USA.

**OBJECTIVES AND LEARNING OUTCOMES**

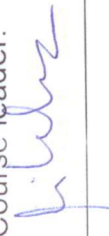
Course objectives	<p>Upon completion of the lectures and after passing the final exam of “Applied Animal Nutrition“ the students will be able to recognize the conditions in the field and to take feed samples for chemical analysis. They will also know the right procedure of taking samples for analysis and super analysis and to correctly interpret the results. The acquired skills will enable them to individually formulate balanced rations and feedstuffs for all species and categories of animals. They will also be able to recognize specific nutrient deficiencies and malnutrition in domestic and wild animals which could have a negative effect on the health status and their products. Students will be capable of determining and applying preventive and therapeutic feeding in cases of metabolic disorders of high producing animals. Besides field work the students will be capable of working in feed mills and in other biomedical fields which require basic knowledge of veterinary nutrition.</p>
Learning outcomes	<p>Upon successful completion of the course students will be able to:</p> <ol style="list-style-type: none"><li>1. Knowing the characteristics of feeding different species of domestic and wild animals in certain physiological periods</li><li>2. Estimating the daily nutritive needs of animals according to the tables of nutritional requirements, biological experiments and practical experience</li><li>3. Recognize deficiencies in feed of domestic and wild animals</li><li>4. Applied manual and computer assembling meals for certain species and categories of animals</li><li>5. Recommend proper feeding for different species and categories of animals in practical farm conditions and corrections for inappropriate feeding</li></ol>



GRADING SCHEME

Points	Grade
Up to 59	1 (F)
60-68	2 (E)
69-76	2 (D)
77-84	3 (C)
85-92	4 (B)
93-100	5 (A)

Course leader:



Head of Department/Clinic:



Note: The course leader is required to submit a Course Syllabus to all teachers and associates pertaining to the Course.

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH LECTURES,  
SEMINARS and PRACTICALS**

<b>Type of activity</b>	<b>Minimum number of points</b>	<b>Maximum number of points</b>
Lectures attendance	3	6
Seminar attendance	4	6
Practicals attendance	4	6
Active participation in seminars and practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
<b>TOTAL</b>	<b>60</b>	<b>100</b>

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH LECTURES and  
SEMINARS**

<b>Type of activity</b>	<b>Minimum number of points</b>	<b>Maximum number of points</b>
Lecture attendance	3	6
Practicals attendance	8	12
Active participation in practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
<b>TOTAL</b>	<b>60</b>	<b>100</b>

**GRADING AND EVALUATION OF STUDENT WORK ON COURSES WITH SEMINARS and  
EXERCISES**

<b>Type of activity</b>	<b>Minimum number of points</b>	<b>Maximum number of points</b>
Seminar / practicals attendance	11	18
Active participation in seminars and practicals	5	10
Continuous knowledge checking (mid-terms)	20	32
Final exam	24	40
<b>TOTAL</b>	<b>60</b>	<b>100</b>